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Professional Engineers & Affiliates

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January 7, 1994


Mr. William F. Caton, Acting Secretary
The Federal Communications Commission
1919 M Street, NW
Washington, DC 20554

Re: ET Docket No. 93-7 ✓ FCC 93-495, Notice of Proposed Rule Making

Dear Mr. Caton:

Comments on the referenced NPRM are attached. An original and nine copies have been provided, sufficient for distribution to each Commissioner.

Very truly yours,



O. D. Page, P.E.

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JAN 10 1994

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Attachments

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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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In the Matter of

JAN 10 1994

Implementation of Section 17
of the Cable Television
Consumer Protection and
Competition Act of 1992

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ET Docket No. 93-7

FCC - MAIL ROOM

Compatibility Between
Cable Systems and Consumer
Electronics Equipment

COMMENTS OF O.D. PAGE, P.E.

Professional Engineers & Affiliates

Qualifications and Experience of this Commenter are on file with the FCC, and summarized briefly in Exhibit I hereto.

I. IN SUMMARY:

- A. It appears that a *monopoly exists*, and may continue to exist, for Cable in-home equipment. Cable Operators must allow subscribers to obtain all equipment from third-parties on a competitive basis, and so notify subscribers (The Telephone Companies maintained for many years that such a plan just wouldn't work, for example). The proposed devices and modifications pose a potential expense to the subscribers and the taxpayers (for law enforcement) in the billions of dollars.
- B. Privacy is a serious consideration, when outside parties are allowed to own or control complicated electronic, communications, decoder, addressable, digital equipment *in the homes of tens of millions of subscribers*.
- C. Truly Cable-Ready TVs and VCRs are required. The problem will be *cost*; consumers won't pay more unless they are satisfied they are getting more, of what they want, immediately. Building TV sets today for a market that may or may not develop will cause additional millions of dollars of unnecessary expense to consumers.

II. COMMENTS

Comments are selective and refer to specific numbered points of the NPRM:

Item 1. There is a need for *better prevention of theft of service*. Unfortunately, the Cable Industry does not appear to be succeeding under its present practice of attempting to control equipment inside the subscribers' homes, i.e., classifying certain equipment as "contraband". This is a monopolistic practice reminiscent of conditions leading to the Carterfone Case of a few years ago, where the Telephone Companies were doing the same thing, with FCC approval. All indications are that theft of service is getting more out of control than ever, despite heavy expenditures and efforts on the part of the Cable Industry and law enforcement agencies (at taxpayers' expense) to "outlaw" any equipment not owned and/or controlled by the Cable Industry.

There is room for serious doubt that placing Operator-owned-and/or-controlled equipment in the home will ever provide adequate protection against signal theft. In fact there is clear evidence that Cable Operators are not able to account for *their own signal-control equipment*; it too often disappears, then appears illegally in non-subscribers' homes. Further, the NCTA states that signal theft is *increasing drastically*, such as perhaps from 4.7 billion dollars in 1992 to perhaps 6 billion dollars in 1993. These numbers, by the way, are very much in question, themselves.

Item 9. It is noted in passing that both Co-Chairmen of the CAG have (had) an interest in placing Cable-Operator owned equipment in the home—one as a Cable Operator and one as a manufacturer of Cable-Operator-controlled set-top boxes (as well as consumer electronic equipment) and now perhaps additional in-home Cable equipment (integral decoders). After all, there would be a vast potential market (on the order of 100 million or more?) for these devices, one for each VCR and TV in each Cable home—not just one per Cable home.

This heavily-staffed and highly-touted Group apparently did not produce a report as such (none is included in the FCC October 5, 1993 Report to Congress), but the CAG did propose that a device be required for each VCR and each TV set, each of which would also be modified to accept this device, called a "component-descrambler/decoder", by addition of a "decoder-interface", at increased cost to the consumer.

This "decoder interface ", for practical purposes, must be added to every VCR/Receiver manufactured, or separate models of "Cable-Ready Equipment" must be marketed, further fragmenting the consumer electronics market. The "component-descrambler/decoder" must be added to each subscriber's VCR/TV receiver device used to receive encoded TV signals (*not just one per home*), *almost all of them in those areas where cable programming services are scrambled*. The potential cost to the *subscriber and the public* (who will *surely* pay the bill) can be in the *billions* of dollars, including profits to Cable Companies. How does that help the objective of "rate regulation"?

The "component" box in the home is quite susceptible of being modified or replaced for signal-theft purposes. Any decoder scheme of reasonable cost can be defeated by "tekkies" or "hackers" who do such things not only for profit but also for the challenge, perhaps even more of the latter. The time to develop a defeating technique for such equipment would be weeks or months at most, perhaps only days. This box will continue to be inadequate and vulnerable if it remains inside the home. Many people will tamper with boxes or use "modified" boxes in the privacy of their home if they know they have a good chance of getting by with it; few will go outside to do it. Further, each day we are presented with an abundance of data to show that respect for the law in this Country is decreasing, especially in the case of such perhaps "petty" crimes, and the privacy of the home itself tends to encourage rather than deter such crime.

It appears that adequate consideration of future encoding of other means of providing TV programming is lacking, i.e., if video tapes, CDs, and other media are encoded, will these require yet another decoder box, with different decoding standards? This subject is mentioned only in passing, in these proceedings.

There is another way to look at this: If the Cable Industry's monopoly on such in-home equipment could be terminated by allowing subscribers to purchase equipment from third-parties, the subscriber (and non-subscriber) would be less inclined to "steal" services that they believe are overpriced because of the monopolistic conditions in pricing, i.e., there would be no monopoly on such equipment. Cable Operators have refused to allow third-party cable equipment in homes, but in fact such equipment is often available at a lower cost, is more reliable, contains more and better features, and is more "user friendly". There is no problem with signal protection; the Operator could, if he chose to do so, program such equipment to receive the signals that the subscribers paid for, and the equipment that is used legally can be electronically "tagged" (addressability will be universal, soon). However, detection of illegal, unidentified in-home equipment will continue to be a problem. The Cable Operators are not in control of the *equipment* now; the only deterrent is law, which seems to be difficult or impossible to enforce. If special equipment is to be used in the home, the best method of controlling use of such equipment may well be in tagging, detection, and identification, not trying to control millions of pieces of equipment as "contraband". A beneficial *competitive market* can then develop.

And if past history is any indication at all, the real cost of such equipment (to the users) would then plummet, in the presence of competition, pending possible development of off-premises ("Point-Of-Entry) control.. Subscribers must be free to obtain any equipment used *in their homes* on a purchase or lease basis, and from a competitive market (i.e., from Cable Operators and/or other suppliers). The Cable-Operator monopoly doesn't work; in fact, perhaps it presents too much of a challenge to those people out there.

Signal-theft costs are going up. All of this in spite of the vast amounts of money spent by the Cable Industry and the law enforcement agencies (who are spending taxpayer money), attempting to "keep the equipment in the corral". Perhaps this situation has some resemblance to something else that didn't work many decades ago: prohibition.

Items 14 & 16. Subscribers must have the same third-party purchase options for all equipment, not just remote controls.

Item 20. The Cable Industry and the Consumer Electronics Industry "made a move" in the direction of something like the "decoder-interface connector" just a few years ago. *It didn't fly.* Cost was the cause of that failure. Consumer electronics is an industry where engineering changes are made to save a few cents per unit [e.g., *removing a 15¢ coaxial fitting and 20¢ worth of cable* from a top-of-the-line (\$800) TV set to save perhaps \$1]. The Consumer Electronics Industry modified a few sets, but Cable apparently didn't buy many boxes. Maybe it was too soon for its time; maybe it wasn't; and maybe it isn't practical yet. (The decoder-interface connector may cost more than \$1.)

Item 21. In an industry where a \$1 coaxial fitting and cable will be removed from an \$800 TV set to save money, it boggles the mind to think of building 1-GHz Tuners (plus necessary added shielding) into every TV set and VCR, where the highest frequency used now is mostly lower than 550 MHz (already becoming a technical problem in cable distribution equipment), and where talk is rampant about perhaps quadrupling TV-channel capacity in the same frequency spectrum by signal suppression, e.g., increasing actual TV-channel capacity of a 550-MHz system to upwards of 300 channels. Perhaps the modular approach to TV tuner change-out would work, at (at comparable cost to a channel converter?).

Items 24 & 25. Switches. An attenuation level of six (6) dB for a switch would appear to be more than a bit high? Sixty (60) dB isolation would appear to be nearing a marginally low condition.

Item 30. No "separate charge" for equipment? Did this come from a "Spin Doctor"? It will be included in the Rates, *unnecessarily* and *undesirably* stifling competition. The costs, *plus profit*, will indeed be "recoverable", but hidden from sight. Surely no one who is the least bit familiar with business practice could believe for a moment that this monopolistic practice would "... encourage cable operators to use signal delivery methods that provide all purchased channels simultaneously, in the clear." as long as the Cable Operator can control this vast potential for in-home equipment. This has some of the aspects of "consumer hustling".

Item 34. Looking forward to digital boxes, e.g., for decompression, there is no better reason for installing in-home "digital devices" owned and controlled by Cable Industry, than for current addressable converter set-top boxes (which are also digital).

Not addressed in this proceeding is the matter of privacy. Given a technological condition where a National-Security-coded encryptor can be designed with an output available to special parties, think of the possibilities for more than one "secure" device *in every subscriber's home*, perhaps accessible for personal information.

This matter surely must be addressed as part of the standards for any in-home equipment, if only to deal with the "big brother" effect on the public.

Respectfully submitted,



O. D. Page, P.E.

301/469-6688

January 7, 1993

GENERAL QUALIFICATIONS:**Education:**

BSEE, Oklahoma State University
MSEE, Massachusetts Institute of Technology
EMP (Executive Management Program), Penn State University
One-Year Business Internship with TRW, Inc.

Professional and Business Affiliations and Activities:

Registered Professional Engineer: Ohio; Maryland; Virginia; Florida.
Member of NATOA, NCTA, CATA, IEEE, EIA Technical Committees, FCC Cable Technical Advisory Committee (C-TAC), SCTE, SMPTE, Mensa
Former Chairman of EIA Broadband-Communications Section

Technical Papers and Publications:

"CATV Transmission System Design for 20-Year Life and Year-Round Stability."
"Dual Pulsed-Pilot-Carrier ALC for Temperature and Color Stability of CATV Transmission Systems."
"The Future of Integrated-Optics Techniques in Broadband Communications."
"Qualification and Qualifications of Technical People in the CATV Industry"--C-TAC Panel 6 Assignment for the FCC.

POSITIONS HELD:**Owner****Owner****General Manager****Vice President****Director, Engineering &****Marketing**

Contracting Company: Design, Furnish, Install, Rebuild, and Maintain TV-Distribution CATV, MATV, Security, Intercom, Satellite-Receiving, Communications Systems. Professional Engineering and Consulting Business. CATV Systems and Equipment, Top-50 Corporation. CATV Systems Operations. Radio Telemetry, Reconnaissance, Communications Equipment and Systems.

PROJECTS:

CATV Franchising and Regulatory Support.
Patent Litigation; Expert Testimony
Appraisal of CATV Systems.
Satellite-Receiving-Station Projects: Design, Furnish, Install, Maintain.
First VHF Solid-State Receiver / Predetection-Combiner System.
Contracting, Design, and Implementation of CATV Systems.
Design of Modular and Bi-Directional CATV Distribution-System Equipment.
Institutional Networks.
Theft-of-Services.
First Broadband-Circuit Solid-State Heat-Sink Packaging.
Application of MTBF (Mean Time Between Failures) in CATV Systems.
Optical Fibers in CATV.
Closed-Circuit-TV Systems for Navy Combat Control Center.
Airborne Closed-Circuit TV Fire Control System.
Missile Range Telemetry System
Automated TV-Rating System.

CATV EXPERIENCE: 1968-Present

Professional Engineers and Affiliates, 1974 - Present. Principal and Owner.

Municipal Franchising and Support: Including System Evaluation and Proof Testing; Institutional Network System Design Approval; Pre-Franchising / Renewal Evaluations; Studies; Franchising; Evaluation of Cable Operators for Franchise Renewal.

CATV Franchising: Provide technical support and/or prepare complete franchise applications, including capital-expenditure projections (system capital costs); cash-flow projections and proformas; services; full response to franchise requirements.

Perform Various Studies: (e.g. Optical Communications; FCC Filings; Technical Support; Frequency Allocations; FCC Compliance; Patent Litigation; Theft of Services; etc.)

Perform CATV-System Asset Appraisals -- More than 30 Systems in U.S., Puerto Rico.

Expert Testimony: Federal and State Courts

GTE Sylvania : General Manager, CATV Equipment and Systems Operations. (See Below)

Entron, Inc: Vice President, CATV. Equipment Design and Manufacture; System Construction; Systems Operations and Management

EMPLOYMENT HISTORY:

GTE-SYLVANIA, INC.

Product Manager, CATV,

General Manager, CATV Operations,

Directed Sylvania's entry into the CATV Business. Developed and Staffed the Organization; Completed Redesigns and Tooling of Product Line; Bid, Contracted and Performed Turnkey Installation of over 20 complete Operating CATV Systems for a total of more than 2,500 miles of Cable Distribution System. Moved the entire Operation from New York State to El Paso / Jaurez without loss of continuity, employees, or customers. Move paid out in less than two years.

ENTRON, INC.

Vice President

Developed new line of Modular CATV Distribution-System Equipment. Contracted, Designed, Installed, and Tested CATV Systems in Florida, Louisiana, and New York. Managed seven Operating CATV Systems in Pennsylvania, North Carolina, and Louisiana.

OTHER EXPERIENCE:

LOCAL TV-DISTRIBUTION SYSTEMS

OWNER, MASTERCOM

Satellite-Station, Security, and Communications Contracting Business -- successful since 1976.

TRW, Inc.

Engineering; Sales; Program Management;

Microwave Components, Control Systems, and Closed-Circuit Television Systems.

GENERAL ELECTRONIC LABS, INC.

VITRO ELECTRONICS, INC.

Director of Engineering & Marketing

VHF Telemetry; Reconnaissance; Surveillance Equipment and Systems. Solid-State Design. Military, Industry, NASA, Security Agencies.

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